

Can You Analyze This Problem?

By PERRIN STRYKER

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Can You Analyze This Problem?

A management exercise

By Perrin Stryker

The ability of managers to solve problems and make decisions rationally has long been assumed to be one of the valuable products of experience on the job. But close observation of their actual practices has shown that even veteran managers are likely to be very unsystematic when dealing with problems and decisions. And their hit-or-miss methods often produce decisions based on erroneous conclusions, which means that the decisions must also be wrong.

Some years ago, the surprisingly inefficient ways in which managers use information led Charles H. Kepner, a social psychologist, and Benjamin B. Tregoe, a sociologist, to develop a systematic approach to problem solving and decision making. A description of the research and training methods developed by Kepner-Tregoe and Associates of Princeton, N.J., was presented to HBR readers in an earlier issue.¹ And by now more than 15,000 experienced managers in major corporations have been trained in their concepts of problem analysis and decision making. These concepts are shortly to be published in book form.²

Practically every manager who has taken this training has been rather rudely shocked to discover how faulty his own reasoning methods have been in handling problems and decisions.

¹ See "Developing Decision Makers," HBR September-October 1960, p. 115.

² Charles H. Kepner and Benjamin B. Tregoe, *The Rational Manager*, edited with an introduction by Perrin Stryker (New York, McGraw-Hill Book Company, Inc.).

Readers are therefore invited to test their own reasoning powers against the problems presented in the case history, based directly on an actual situation, set forth below.

The Burred Panels

The problems to be solved are presented in the form of dialogues between various managers in a plant which manufactures quarter panels — the body parts that cover the front quarters of the car, including the wheels. The quarter panel is the successor to the fender, and is the part most often damaged in collisions in traffic accidents. This plant has 3,000 employees and makes not only quarter panels but many other smaller parts and components for two of the models sold by one of the Big Three auto companies.

The panels are made on four separate production lines, each line headed by a huge hydraulic press that stamps the panels out of sheet-steel blanks. When the flat steel arrives at the plant from various suppliers by rail, it is unloaded and carried to a machine which cuts identical-size blanks for all four hydraulic presses. Blanks go to the presses by forklift trucks in pallet stacks of 40 each, and the schedule is so arranged that there is always a supply on hand when the presses are started up on the morning shift.

The Principals

Since this problem, like any other management problem, involves different types of peo-

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ple, the following brief descriptions of the characters, whose names have been disguised, may be useful:

- *Oscar Burger, Plant Manager — a tough manager in his late fifties; known for his willingness to listen to others; considered antiunion by the employees.*
- *Robert Polk, Production Chief — a hard-nosed driver, very able technically, but quick-tongued and inclined to favor certain subordinates; also considered antiunion by the employees.*
- *Ben Peters, Quality Control Manager — reserved, quiet, and cautious when dealing with others; extremely confident in his figures.*
- *Ralph Coggin, Industrial Relations Manager — a fairly typical personnel manager; sympathetic to employees; relies on human relations techniques in dealing with the union.*
- *Andy Patella, Shop Steward — antagonistic to management and eager to prove his power; has developed rapport with Industrial Relations Manager Coggin.*
- *George Adams, Supervisor on Line #1 — steady, solid, and well respected by his men.*
- *James Farrell, Supervisor on Line #2 — irascible, ambitious, and somewhat puritanical; very antiunion.*
- *Henry Dawson, Supervisor on Line #3 — patient, warmhearted, and genuinely liked by his men.*
- *Otto Henschel, Supervisor on Line #4 — aloof, cool, and a bit ponderous; neither liked nor disliked by his men.*

Morning Emergency

The situation opens at 11:00 a.m. on a Wednesday in the office of Plant Manager Oscar Burger, who has called an emergency meeting. Fifty minutes ago he learned from Production Chief Bob Polk that nearly 10% of the panels coming off lines #1 and #2 were being rejected by Quality Control because of burrs and other rough spots.

BURGER: I've called you in here because we're in real trouble if we can't lick this reject problem fast. The company needs all the panels we can ship, and more, if it's going to catch up with this new-model market. Both new models of the Panther and the Cheetah are going over big, and if we slow down on panels, the old man in Detroit will be on my neck fast. So let's

get all the facts out on the table and run this thing down before lunch. Bob here tells me Line #1 started putting out rejects about three minutes after the end of the 10 o'clock relief break and Line #2 went wild about 9:30. Bob, suppose you tell us just what you've found out so far.

POLK: You've about covered it, Oscar. Farrell, the supervisor now on Line #2, says he's checked several times to see if these burrs in the panels are being caused by something in the sheets, but he hasn't found anything suspicious. Sheets all look nice and clean going into the press, but many come out rough as hell. He says the inspectors report that rejects rose from the normal one or two an hour to eight or nine in the last hour. On Line #1, George Adams says it's about the same story, and he can't figure it out — it just started up suddenly after the relief break.

BURGER: Doesn't Farrell or Adams have any idea why it started?

POLK: Well, Farrell is sure it's deliberate sabotage by the drawpress operators, but he can't catch them at it. He says it's not hard to produce burrs and rough spots if a man positions a sheet just slightly wrong. He says the men on his line are mad as hell over his suspending Joe Valenti yesterday, and he had another argument when Valenti came in this morning against orders and tried to take back his press job. Farrell called the guard and had Valenti escorted to the gate.

BURGER: What's that? I never heard about this. What's wrong with Valenti? (*He turns to Industrial Relations Manager Coggin.*) Ralph, what about this?

COGGIN: Oh, I don't think it's all Valenti's fault. He and Farrell have been at it for a long time, as you no doubt know, arguing over management's rights. Farrell says he saw Valenti go behind the tool crib yesterday afternoon during the relief break, and Farrell swears Valenti had a bottle with him. He caught Valenti drinking on the job last year, you remember, and says he wishes he'd fired Valenti then instead of suspending him. You know how Farrell is about liquor, especially on the job. Anyway, he accused Valenti of drinking on the job again, and after some hot words he sent Valenti home for the rest of the week. Andy Patella, the

shop steward, protested Farrell's action immediately, of course.

POLK: Farrell's OK, Ralph; he's doing his job.

BURGER: Let's get back to this reject problem. What has Valenti got to do with it?

COGGIN: Well, I talked with Patella, and he reports the men on all four lines are sore as hell. They made some sharp cracks about Farrell being a union-buster yesterday after the argument and again this morning when he threw Valenti out. When the drawpress on #2 started putting out a lot of rejects on Panther panels, and Quality Control reported this to Farrell, he went over to the press operator and made some suggestions on placing the sheets, or something like that. The man just glared at him and said nothing, Patella tells me, and Farrell finally walked away. The reject rate stayed high, and during the whole 15 minutes of the relief break the men from all the lines were talking together about Valenti's case. Patella says Valenti's young brother, Pete, a spot welder who works on Line #3 under Dawson, called for a walkout, and quite a few seemed to think it was a good idea — contract or no contract. Then right after the men went back to work, Line #1 started to throw off rejects at a high rate.

BURGER: What does Adams think about this, Ralph?

COGGIN: He won't completely buy that sabotage theory of Farrell's, but he admits there doesn't seem to be any other explanation. The maintenance troubleshooters have been all over the press and can't find anything wrong. The die is OK, and the hydraulic system is OK. They made some adjustments on the iron claw that removes the piece from the press, but that's all.

BURGER (*turning to Quality Control Manager Ben Peters*): Ben, what is your idea about this?

PETERS: It's hard to say what might be causing it. We've been checking the sheets from Zenith Metals we started using this morning, and they looked perfect going through the blanker. Besides, it's only on lines #1 and #2 that we're getting burrs, so maybe we've got trouble with those presses.

POLK: I'll check it with Engineering, but I'm willing to bet my last dollar the presses are OK.

BURGER: Yes, I think you can forget about trouble in the presses, Ben. And the blanker's never given us a hard time, ever. Still, you'd better have Engineering check that too, Bob, just in case. Meanwhile, I'd like to (*He pauses while the door opens and Burger's secretary slips in and hands Peters a note.*)

PETERS: I'll be damned! My assistant, Jerry, tells me that Line #4 has just begun turning out a mess of burred rejects. I wouldn't have thought that slow old line could go haywire like that — those high-speed presses on the other lines, maybe, but not on Henschel's steady old #4 rocking along at 50 panels an hour.

POLK: Well, that seems to knock out a theory I was getting ready to offer. With #4 acting up, too, it looks like the press speeds aren't to blame. Now I guess we won't have long to wait before Dawson's line also starts bugging up the blanks.

COGGIN: Maybe #3 won't go sour if what Patella says about Dawson is true. He says Dawson's men would go all out for him if he asked them, and I gather Patella hasn't had much success selling them on his anticompany tactics.

BURGER: What's he peddling now?

COGGIN: Same old stuff. He claims the company is trying to discredit the union with the men, especially now that contract negotiations are coming up next month. This year he's also tossed in the rumor that the company will threaten to abandon this plant and move out of the state if the union does not accept the local package of benefits management offers in negotiations.

BURGER: That's stupid. Hell, when will the union wake up and give us a fair day's work for the pay they're getting? But let's stop this chatter and get after these rejects. Check anything and everything you can think of. We can't afford to shut any line down with the factory as tight as it is on Panther panels. Let's meet back here at 4 o'clock this afternoon.

Informal Get-Together

The meeting breaks up, and Polk goes to the shop floor to check on the presses and the blanker. Peters goes to his quality-control records to see when the reject rate last hit its current level. Industrial Relations Manager Coggin seeks out Patella to check on Farrell's handling of Valenti and the other men on his line. Dur-

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ing the lunch hour in the cafeteria, an informal meeting of the four supervisors and Production Chief Bob Polk takes place.

FARRELL: I suppose you got the boss all straightened out on those rejects, Bob. That Valenti has a lot of buddies, and we'll need to keep our eyes peeled to actually catch them fouling up the stampings.

HENSCHER: You can say that again! I've got a couple of Valenti's old buddies on my line, and ever since the burrs started showing up about 11:20, they've been extra careful. I've traced at least three rejects that I think I can attribute to him.

POLK: Keep a count on who makes the most rejects, and maybe we can pin this down to a few soreheads.

ADAMS: You fellas sound like you're on a man-hunt. As for me, I think Engineering will come up with the answer. The press on my line has been making more noise than usual today, and I think there's something fishy there. Right now, Bob, I'd like your help in getting the night shift to cut down on the number of stacks of blanks they leave us for the morning runs. It'd help a lot if they'd keep it down to two stacks of 40 each. Again this morning I had four stacks cluttering up my area.

POLK: I'll see what we can do with Scheduling.

HENSCHER: I'm with you there, Adams. I've been loaded with four stacks for the last five days running. With my slow-speed old equipment, I could manage nicely with only one stack to start off. I noticed that Farrell had two stacks and Dawson had only one to start his line today, and why should they be getting favors?

DAWSON: Now, Otto, you're just jealous of my new high-speed press. You got an old clunker, and you know it. What you need is to get off that diet of Panther panels and join me banging out those shallow-draw panels for the Cheetah. Also, it might help you to smile now and then when one of your men cracks a joke. Remember that old proverb, "He that despiseth small things shall fall by little and little."

FARRELL: I can think of another proverb that you might consider, Dawson. "Spare the rod and spoil the child." Is it true that your crew

is going to win a trip to Bermuda if they're all good boys and make nothing but good panels?

ADAMS: Aw, cut it, Farrell. We can't all be tough guys.

FARRELL: Well anyway, I'm glad Dawson didn't have to cope with Valenti today. That boozier is finally out of my hair. I can't forget last year when he helped Patella spread the word that if the men would burr a lot of the stampings, they could pressure management into a better contract. I wouldn't be surprised if Valenti and Patella were in cahoots now, trying the same angle before negotiations start.

ADAMS: Relax, Farrell. You can't prove that's so. The men aren't as dumb as all that, as last year proved when they refused to believe Patella. What bugs me is those rejects this morning. Never saw so many bad burrs show up so fast.

HENSCHER: They sure surprised me, too, but you know I think Quality Control may be a little bit overexcited about the burrs. I figure all of them could be reamed and filed out with a little handwork. Put two extra men on the line, and it would be all taken care of.

FARRELL: Maybe so, but you know how Burger would feel about the extra costs on top of the lower output. And don't forget, Henschel, our high-speed presses are banging out 30 more an hour than yours. Well, I gotta get back and see what's with Valenti's buddies on my line.

Aside Conversation

All the supervisors get up and leave together. They pay no attention to Industrial Relations Manager Coggin talking with Shop Steward Patella in a corner of the cafeteria.

COGGIN: What I want to know, Patella, is why did Valenti try to get back on the line this morning against Farrell's orders?

PATELLA: Why not? Farrell was miles off base sending Joe home yesterday without telling me or you or anyone else. I was glad Joe came back and faced that s.o.b. Farrell's been getting jumpier and jumpier lately, and do you know what they say? They say he's cracking up over that poor kid of his — the little teenager who's turned out to be such a tramp. I feel sorry for him, but that's no reason why he has to take his feelings out on his men. His crew won't take it

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much longer, and the other crews are sore, too. You know Valenti's brother this morning over on Line #3 began talking about a walkout?

COGGIN: Yes, I heard he did. So why didn't they go out?

PATELLA: Oh, that crew of Dawson's is too company-minded, and there are some older men there who almost worship Dawson. But they'll go out if management doesn't wise up and respect their rights.

COGGIN: What about that man who got hurt last night on overtime while unloading those sheets?

PATELLA: He's been on the job for a couple of months, but he tells me he wasn't familiar with the method of blocking that Zenith Metals uses. He's not hurt bad, but he'll get workmen's compensation OK.

COGGIN: Sure. Now how certain are you about Farrell not finding any bottle behind the tool crib after he suspended Valenti? And are you sure you're right that there were no witnesses? You know you've got to be positive of your evidence.

PATELLA: OK, Ralph. I'm certain, I'm sure, I'm positive!

Afternoon Meeting

Three hours later, Plant Manager Burger is again in a meeting with Production Chief Polk, Quality Control Manager Peters, and Industrial Relations Manager Coggin.

BURGER: Let's hear from you first, Bob, about that check on the presses and the blanker. Any clues to those burrs?

POLK: Nope. Everything is OK with the machinery, according to Engineering. They even thought I was nuts to be questioning them and making them double-check.

BURGER: I can imagine. But we can't overlook anything, no matter how impossible Engineering may think it is. By the way, Ben, are the rejects still running as high this afternoon?

PETERS: Higher. Line #1 is lousing up nine or ten an hour, Line #2 is ruining about a dozen, and Line #4 is burring about seven an hour.

BURGER: What about Line #3?

PETERS: Nothing so far. Dawson's line has been clean as a whistle. But, with Valenti's brother on the line, we can expect trouble any time.

POLK: Maybe not. Dawson's reject rates have always been a bit lower than the others'.

BURGER: That so? How do you account for that?

COGGIN: How about better supervision accounting for it? Dawson's men always seem to take more pride in their work than the other men do, and they really operate as a team. The other day I heard two of his men talking about one of their crew who apparently was getting careless, and they decided to straighten him out themselves, without bothering Dawson. When you get that kind of voluntary discipline, you've got real supervision.

BURGER: Glad to hear that some of our men feel responsible for doing good work.

POLK: Dawson's crew is OK. One of his men will always tip me off early if they're getting low on blanks, but the night shift on that line is mighty careless. That crew left Dawson's line with only a half-hour's stack of blanks to start up with this morning.

PETERS: By the way, Bob, have you heard that some of the men on the other crews are calling his men "Dawson's Darlings"? The rumor is that those shallow Cheetah panels are easier to make, and someone played favorites when they gave that production run to Dawson's crew.

POLK: That's crazy. We gave those panels to Dawson's line because this makes it easier for the Shipping Department, and they just aren't any easier to make; you know that.

PETERS: I know, but that's what the men say, and I thought you'd like to be cut in on the grapevine.

COGGIN: If the men think the deep panels are a harder job, maybe there's something to it. I've heard this story, too, and there's a chance the union may try to review our rates and standards one of these days.

POLK: Yeah? Well, I say nuts to it. If those items go on the agenda, then Patella might as well be running this shop. Why don't we ask the union: "How about making up for that half-hour Line #2 lost this morning while Valenti argued with Farrell about his suspension?"

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COGGIN: While you're asking, ask Farrell why he didn't call me before suspending Valenti yesterday. What a mess Farrell put us in!

BURGER: What do you mean, Ralph?

COGGIN: Just that we've got a real big grievance coming up, for sure. Patella tells me that after Farrell suspended Valenti yesterday, he went looking behind the tool crib and couldn't find any sign of a liquor bottle. Also, Patella claims there were no witnesses around when Farrell accused Valenti of drinking on the job. It's going to be impossible for Farrell to prove he wasn't acting merely on his suspicions, without evidence. And the union is sure to hit us hard with this, especially with contract negotiations coming up.

BURGER: Damn it, Farrell should have known better! This isn't the first time he's been tough with a man, but he's got to learn to use better judgment. Bob, you'd better have a talk with him right away. See if anything special is chewing him. Maybe a little firm advice from you will sharpen him up.

POLK: OK, Oscar, but Farrell's a very good man, and we ought to back him up on this completely.

COGGIN: If you do, you're going to have real trouble with the union. Patella says if we don't drop the charge against Valenti and reinstate him, he's going to propose a strike vote, and he claims the men will positively go out. It looks like they have a clear case against Farrell and, except for Dawson's men, a lot of them seem plenty sore. And those rejects they're producing are telling you so, loud and clear.

POLK: Oscar, we can't undercut Farrell! If we do, we're playing right into the union's hands. It's obvious that Valenti is in collusion with Patella on this, and they're framing Farrell to get themselves a hot issue for the contract negotiations. I say we should charge the union with framing Farrell and willfully producing rejects. If they try to strike, get an injunction immediately so we can keep production up and satisfy Detroit.

BURGER: Not so fast, Bob. I'd rather first try to get the union off our backs before they seri-

ously start talking about a strike. Ralph, what about that demand the local union agent told you he was going to make — something like 10 minutes' extra wash-up time? If we gave in to him on this, do you think he could hold Patella in line on this Farrell-Valenti problem?

COGGIN: Probably. But you would want to find some way for Patella to save face, as well as Farrell.

BURGER: You may be right, but we can't let Patella think he can go on using this sabotage technique of his. I want to mull this over some more before deciding what our answer will have to be. Meanwhile, Ben, you keep a close check on the reject rates. And you, Bob, check on the operation on Line #3 to see if there really is anything to that rumor about our favoring Dawson's crew. Ralph, see what you can find out about that extra wash-up time deal and how Patella feels about it. That's about all I can suggest for now. Let's meet again tomorrow at 10 o'clock and wind this thing up.

Burger's Dilemma

The meeting breaks up and the managers go back to their respective jobs. Plant Manager Burger spends some time by himself trying to resolve the dilemma. He sees two choices facing him: (1) back up Farrell and risk a strike that might be stopped by injunction, or (2) avoid a strike by undercutting Farrell, reinstating Valenti, and asking the men to cooperate in eliminating excess rejects. He does not like either of the alternatives, and hopes he can think of some better way to get out of this jam. At least, he tells himself, he has a night to sleep on it.

Your Analysis?

Has Plant Manager Burger analyzed the situation correctly? You are invited to think through this situation for yourself and decide how you would go about solving it. You will be able to compare your results with the solutions that will be presented in Part II in the July-August issue of HBR, which will describe the Kepner-Tregoe concepts and procedures for problem analysis.

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